

# TUNABLE WAVELENGTH LOCKER, TUNABLE WAVELENGTH SPECTRUM MONITOR, AND RELATIVE WAVELENGTH MEASUREMENT SYSTEM

## Abstract

A system for tuning the wavelength of a beam from a tunable laser. A tunable etalon assembly includes a Fabry–Perot etalon with paired reflectors to filter the laser beam. The tunable etalon also includes a thermal unit to thermally adjust the separation of the paired responsive to an etalon tuning signal. A photodetector receives the laser beam after filtering the etalon and generates a detected signal based on intensity. A controller generates the etalon tuning signal, and receives the detected signal and generates a laser tuning signal based on it. Optionally, additional Fabry–Perot etalons, photodetectors, and one or more beamsplitters permit extending wavelength range and determining relative wavelength difference with a beam from a second laser.